



Chambers's Journal

SIXTH SERIES.

CAPITAL PUNISHMENT.

By MAJOR-GENERAL SIR EDMUND F. DU CANE, K.C.B.



BRIGHT Pennsylvanian youth, being required on his examination to set forth the advantages secured to every citizen by the constitution of the United States, included among them 'death by hanging.' If he meant that this institution was retained as a protection against murder and violence, he was not so wrong as might appear at first sight. There are those among us who desire to put an end to capital punishment for various abstract reasons; but they never meet the objection that it is necessary to retain this punishment in order that those who are tempted to commit murder may be deterred by the fear of what may happen to themselves. It is not often that direct evidence of this deterring effect can be obtained; but sometimes chance furnishes the desired proof—as in the following instance. When West Australia, now the great goldfield, was made a convict colony, a local law was passed by which a convict committing a murderous assault on a warden became liable to the penalty of death. A turbulent convict who had been transported to the colony managed to find means of surreptitiously communicating with a friend in England. He therefore sent him a letter which did not, as usual, pass through the hands of the prison authorities. When the letter arrived in England the friend had disappeared and left no address. After lying some time in the Dead-Letter Office, it was returned to the writer through the prison authorities in West Australia, and therefore became open to their inspection. He had in it informed his friend of various points in the new sphere he was moving in, and among other things he mentioned the law above referred to, and made the following comment on it in the lingo of his fraternity: 'They tops' (that is, hang) 'a cove out here for slogging a bloke' (that is, assaulting a warden). 'That bit of rope, dear Jack, is a great check on a man's temper.' *

On the whole, there is no more just answer to
No. 12.—VOL. I.

[All Rights Reserved.]

any proposal for doing away with the death-penalty than that of the witty Frenchman: 'Que Messieurs les assassins commencent.' In order to prevent the painful scenes which have sometimes taken place when an execution is bungled, which lose nothing in their sensational aspect in the notices transmitted to the press, an inquiry was some time ago instituted with a view to establishing a mode of action which should as far as possible prevent any such mishaps. The extinction of life effected by hanging may be brought about either by the constriction of the air-passages, which produces suffocation, or by that of the veins and arteries, producing apoplexy, or by breaking the neck, thus severing the spinal cord. The most instantaneous and least painful of these is the last, and it was determined that the arrangements should be such as to effect that object. In former times the criminal was either pulled up a certain height from the ground (in this method the French used their 'lanternes' as gibbets in the Revolution), or else the cart he stood in was drawn away from under him and he was left hanging. By these methods the length of drop was very short, and death ensued from one of the first two of the above causes. The breaking of the neck is effected by giving a long drop; and Marwood, the late hangman, used to talk of Calcraft, his predecessor, as a 'short-drop man' as one might speak of a rival school of art.

At the time of the Indian Mutiny a considerable amount of rough-and-ready justice was dealt out to the mutineers caught red-handed. A sergeant of one of the flying columns accepted the office of executioner, and, having had no previous experience, was thought to have sometimes given to the patients who came under his hands pain which might have been avoided. His commanding officer summoned him to reply to this charge, and his plea in rebuttal was: 'Please, sir, I hasn't had no complaints.'

In order to settle scientifically the length of drop which should effect the object without

FEB. 19, 1898.

running the risk of mutilating the body by stretching the muscles of the neck to the point of rupture, a learned professor in Dublin, recently deceased, devoted some time to investigating the subject, and evolved a mathematical rule which made the length of drop inversely proportionate to the weight of the patient. Some modification of this is the rule now adopted. A special kind of rope has been manufactured which is very strong and pliant, and stretches very little, so that none of the shock of the descent of the body is absorbed in stretching the rope; and the above rule obviously gives the longest drop for the lightest body, so as to produce the right momentum, and *vice versa*.

There is no lack of competitors for the office of executioner when the operation has to be performed in England, but in Ireland there is a great prejudice against undertaking it; and there have been difficulties sometimes in the Colonies in finding an operator. Marwood used to say he never experienced any unpopularity in England, and accounted for Calcraft being sometimes badly received by saying that 'Mr Calcraft never made himself agreeable.' Going to Wales on one occasion to fulfil his office in the case of a foreigner who had committed several brutal murders, he found himself quite popular, and was received at the station when about to depart with a sort of ovation, to which he responded affably, saying he hoped he might 'before long have occasion to visit them again.' On the other hand, on coming back from Cork, where he had been to carry out the duties of his profession because no native could be found to do the job, he had rather a rough experience; for on board the steamer he overheard a conversation between two Irishmen, one of whom related that he heard the hangman was on board; to which the other replied that if he could find him he would throw him overboard during the night. Marwood on this thought it well to retire to his bed in a dark corner, and did not make his appearance any more until the steamer was well in the dock in England.

On one occasion, at the Cape of Good Hope, a Frenchman offered himself to fulfil the function of hangman. With the national love of effect, he posed as a high public official fulfilling a noble and important function. Dressed in evening costume, with white tie and white gloves, he presented himself on the scaffold, and went through his duties in a most imposing manner; after which, conscious that the bystanders might wish to possess a relic of so great a man and such an occasion, he drew off his gloves, folded them into a neat little ball, and threw them to be scrambled for by his admirers. Sometimes in England the hangman has lent himself to sensational effects by exhibiting himself and his implements in a town where he has been employed, but this is sternly repressed by the authorities.

The demeanour of persons who are destined

to be hanged varies much. Most of them, happily, are conscious of their crime and the justice of their sentence, and die penitent—the old bravado which was the result of the public system of execution is not now so common—but complete indifference is sometimes exhibited. Dr Pritchard, the Glasgow murderer, on his way to the gallows apparently had no thoughts of his own position, but, addressing the medical officer, said, 'It's a very cold morning, doctor; oughtn't you to put on your coat?' Wainwright, the ex-Scripture reader, was obscene and blasphemous almost to the last. When the eight *Flower Land* pirates were brought up for execution, and at the last moment a reprieve arrived for one of them, his immediate thought was, 'Then I can have Francesco's shoes.' The notorious Peace was very business-like. It was said that he and Marwood the hangman had met before in the train and become acquainted with each other's line of life. When they met again on the scaffold at Leeds, and Marwood had put the rope round Peace's neck and was running up the washer to keep it in its place, Peace observed, 'Ain't you a-pulling of it rather tight, Mr Marwood?' 'Oh no,' was the cheerful reply; 'I won't hurt you.'

It is part of the duty of the high sheriff to carry out an execution. He generally acts through an under-sheriff, who sees to all the arrangements, which practically are carried out by prison officers, who for those purposes are under the orders of the sheriff. He appoints the hangman; and it was one of the recommendations of the committee which was appointed to consider all the details of an execution, that an assistant should always be appointed in order that some other person or persons might have experience on the subject in case of need. No spectators are admitted to see an execution except by order of the sheriff, and it is now very common to admit no members of the press, and thus a very unsavoury kind of sensational writing is avoided. In England a coroner's inquest is always held on the body, and this completely satisfies any legitimate public interest in the matter.

In former days when any sentence of death was passed within the jurisdiction of the Central Criminal Court it was the duty of the Recorder to submit the names and offences to the king in council, and it was then decided whether or no the sentence passed in conformity with the law should take effect. Sir Nathaniel Wraxall relates that when Dr Dodd was sentenced to death the king had the strongest desire to save him, and that Lord Sackville had informed him that 'to the firmness of the Lord Chief-justice, Dodd's execution was due, for no sooner had he pronounced his decided opinion that no mercy ought to be extended than the king, taking up his pen, signed the death-warrant.' After he was hanged his body was conveyed to a house in the city of London, and underwent every scientific profes-

sional operation which it was hoped might restore animation. Pott, the celebrated surgeon, was present to direct them.

It is doubtful whether there ever was actually, as is commonly believed, a death-warrant signed by the king—the sentence of the judge is the authority and direction to the sheriff; only the sentences of the Central Criminal Court were systematically brought before the king, and then his action was only to reprieve or pardon.

When the Queen ascended the throne one of the first acts passed was to relieve her Majesty of this duty, for it is dated 17th July 1837, and she succeeded on 20th June. It purports to be to assimilate the practice of the Central Criminal Court to that of other courts in England, and directs that the judge shall order the time and place of execution, not being more than twenty-one days nor less than seven from the date of the order.

A curious survival of old laws unnoticed for some years occurred in connection with this subject. The Isle of Man makes its own laws through a 'Court of Tynwald.' One of these laws passed in 1817 requires that the king shall issue his warrant for an execution to the Lieutenant-governor. In 1872 a wretched man had a quarrel about some small property with his father, aged seventy, in which he was supported by his mother. After going to law they compromised the matter, and the father was to receive a cow from the son. Shortly before the time for handing over the cow, the son went to his father's cottage and killed him with a pitchfork. He

was sentenced to be hanged; and in conformity with the law her Majesty was called in to approve the sentence, which, under advice of the Home Secretary, she did, though with a great strain on her feelings. The Mutiny Act required that all sentences of a general court-martial should be submitted by the judge advocate-general to be confirmed by the Queen, and this might have brought about the submission of death sentence; but the present Army Act enables that duty to be delegated.

The number of executions during the present reign has been much smaller than formerly. Coke, in the time of Queen Elizabeth, remarks on the large number of persons hanged. In 1750 a great increase of crime occurred, and in the following year sixty-three persons were hanged in the small London of those days. But many more were sentenced than were actually hanged. In England in 1785 there were 242 sentenced, and 103 actually suffered. Townsend, the Bow Street runner, said that between 1781 and 1787 he had seen as many as twelve, sixteen, or twenty hanged at one execution. Twice he had seen forty hanged at one time. In the fifty-eight years ending 1894 there were 736 executions in England and Wales, or between twelve and thirteen per annum. In the first ten years there were 100, in the last ten 164—which, though actually more, is, in proportion to the population, less than in the first ten, as the population doubled between 1837 and 1894. The largest number in any one of these years was in 1877, when there were twenty-three; and the smallest in 1871, when there were four.

JOHN BURNET OF BARNES.

CHAPTER XIV.—THE FIRST SUNDAY OF MARCH.



SLEPT late on the next morning, so that it was near nine o'clock ere I was up and dressed. By the time that I broke my fast I had had some leisure to reflect upon the events of the preceding night and the consequences which should ensue. Nicol came to me as soon as the meal was over, and together we sat down to consult.

'This is the Sabbath, your honour,' said Nicol, 'so you may consider yourself free for the day at any rate.'

'Not so free,' said I, for I knew my cousin Gilbert; 'the men I've to deal with have little respect for the Lord's Day.'

'Weel, weel,' says Nicol, 'if that's sae, it maun be sae. Will ye gang oot wi' him the day?'

'No,' said I. 'Not that I am caring for the day, for you mind the proverb, "The better the day the better the work;" but, being in a foreign land, I am loth to break with the customs of my country. So we'll keep the Sabbath, Nicol, my lad, and let Gilbert whistle.'

Now I would not have him who may read this narrative think from my conduct on this occasion that I was whiggishly inclined, for indeed I cared nought about such little matters. I would have a man use the Sabbath like any other day, saving that, as it seems to me, it is a day which may profitably be used for serious reading and meditation.

'Weel, Laird, that means ye'll no see the body though he comes,' said Nicol, 'and, God help me! if ye dae that there'll be a terrible stranash at the street-door. I'se warrant auld Mistress Vanderdecke'll get her ribs knockit in if she tries to keep them oot.'

'They can make all the noise they please,' said I hotly; 'but if it comes to that, the two of us are as good as their bit officers. I ask for nothing better than to take some of the pride out of Gilbert's friends with the flat of my sword. Then, if they come to-day and are refused entrance, they will come back to-morrow, and all will be well.'

'Then what am I to dae? When the bodies

come to the door I'm to say, "His lordship's compliments; but his lordship's busy keeping the Sabbath in his upper chamber, and if ye will come back the morn he'll look into your claims."

"You'll say to them that I am busy with other work, and that I will be glad to see them to-morrow about the matter they know of. Most likely they will go away quietly; and if they do not it will be the worse for their own skins. You take my meaning?"

"I'll dae your orders, sir, to the letter," said Nicol; and I was well aware that he would.

I got my books out and set to work to read the Gospel of John in Greek for my spiritual benefit, but I made little speed. This was mainly the fault of Nicol, who every few minutes came into the little room where I sat, on some feigned errand. I soon divined the reason, for the same chamber contained a great window, whence one might view the whole length of the narrow street wherein the house was situate, and even some little portion of the great Breedestraat at the head. It was plain that my servant was not a little concerned on my account.

"Are you sure that your honour's guid wi' the small-sword?" he asked mournfully. "If this room were a wee bit braider and the day no what it is I micht gie ye a lesson."

I did not know whether to laugh or to be angry. "Why, you rascal," I cried, "do you know anything of these matters? There are many better swordsmen than I in the world, but I think I am more than a match for you."

"Weel," said Nicol modestly, "I've gien some folk a gey fricht wi' the swird; but let that be. I'll be blithe if ye get the better o' him, and a waefu' man I'll be if he kills ye. Lord, what'll I dae? I'll hae to become a sodger in this heathen land, or soom hame, whilk is a thing I am no capable o'." And he began to sing with a great affectation of grief:

"The craw killed the pussie, O,
The craw killed the pussie, O,
The wee bit kitlin' sat and grut
In Jeanie's wee bit hoosie, O."

In which elegant rhyme the reader will observe that my cousin stood for the crow, I for the pussie, and my servant for the kitlin'.

I laughed; but it was not seemly to stand by while your own servant sings a song which compares you to a cat, so I straightway flung a Greek lexicon at his head and bade him leave the room. I much regretted the act, for it was my only copy of the book, Master Struybroek's, and the best obtainable, and by the fall some leaves came out; and one— $\pi\alpha\lambda\pi\alpha\tau\theta\eta$ to $\pi\alpha\lambda\pi\alpha\tau\theta\omega$ —has not been renewed to this day.

After Nicol had gone I amused myself by looking out of the window and watching the passers-by.

I had not sat long when I noted two gentlemen coming down the alley from the Breedestraat,

very finely clad, and with a great air of distinction in their faces. They kept the causeway in such a fashion that all whom they met had to get into the middle of the road to let them pass. I half-guessed their errand, the more as the face of one of them seemed to me familiar, and I fancied that he had been one of the guests at the supper at Alphen. My guess was confirmed by their coming to a halt outside the door of my lodging and attentively considering the house. Meantime all their actions were plain to my view from the upper window.

Now, I had bidden Nicol be ready to open to them and give my message. So I was not surprised when I heard the street-door opened and the voice of my servant accosting the man.

I know not what he said to them, but soon words grew high, and I could see the other come forward to his comrade's side. By-and-by the door was slammed violently, and my servant came tearing upstairs. His face was flushed in wrath.

"O' a' the insolent scoundrels I ever met, thae twae are the foremost. They wadna believe me when I telled them ye were busy. "Busy at what?" says the yin. "What's your concern?" says I. "If ye dinna let us up to see your' maister in half a twinklin'," says the ither, "by God! we'll make ye." "Make me," says I. "Come on and try it."

"Nicol," I said, "bring these men up. It will be better to see them."

"I was thinkin' sae, your honour," says Nicol, "but I dinna like to say it."

So in a little the two gentlemen came up the stairs and into my room, where I waited to receive them.

"Gentlemen," said I, "I believe you have some matter to speak of with me."

"Why do you keep such scoundrelly servants, Master Burnet?" says one, whom I knew for Sir James Erskine of Tullo.

"Your business, gentlemen," I said, seeking to have done with them. They were slight men, whom I could have dropped out of the window, most unlike the kind of friends I should have thought my cousin Gilbert would have chosen.

"Well, if you will have our business," said the elder, speaking sulkily, "you are already aware of the unparalleled insult to which a gentleman of our regiment was subjected at your hands?"

"Oh yes," I said gaily; "I had forgotten. I broke Gilbert's head with a wine-glass. Does he want to ask my pardon?"

"You seem to take the matter easily, sir," said one severely. "Let me tell you that Master Gilbert Burnet demands that you meet him at once and give satisfaction with your sword."

"Right," I cried, "I am willing. At what hour shall it be? Shall we say seven o'clock to-morrow morning? That is settled then? I have no second, and desire none. There is the length of my sword. And now, gentlemen, I have the

honour to wish you a very good day,' and I bowed them out of the room.

They were obviously surprised and angered by my careless reception of their message and themselves. With faces as flushed as a cock's-comb they went downstairs and into the street, and I marked that they never once looked back, but marched straight on with their heads in the air.

'Ye've gi'en tha' lads a flea in their lug,' said Nicol. 'I wish ye may gie your cousin twae inches o' steel in his vitals the morn.'

The rest of that day I spent in walking by myself in the meadows beyond the college gardens, turning over many things in my mind. As for the fight on the morrow, I did not know whether to await it with joy or shrinking. As I have said already, I longed to bring matters between the two of us to a head. There was much about him that I liked; he had many commendable virtues; and especially he belonged to my own house. But it seemed decreed that he should ever come across my path, and already there was more than one score laid up against

him in my heart. I felt a strange foreboding of the man, as if he were my *antithesis*, which certain monkish philosophers believed to accompany every one in the world.

If I conquered him, the upshot would be clear enough. He could not remain longer in Leyden. His reputation, which was a great one, would be gone, and he would doubtless change into some other regiment and retire from the land. If, again, he had the advantage of me, I had no reputation to lose, so I might remain where I pleased. So he fought with something of a disadvantage. It was possible that one or other might be killed, but I much doubted it, for we were both too practised swordsmen to butcher like common cut-throats. Nevertheless I felt not a little uneasy, with a sort of restlessness to see the issue of it all—not fear, for though I had been afraid many times in my life, it was never because of meeting a man in fair combat.

Toward evening I returned to my lodging, and devoted the remainder of the day to the study of the books of Joshua and Judges for the comforting of my soul.

THE MINERAL RICHES OF CHINA.

THAT has long been known that the mineral resources of the Chinese Empire were extensive, and not a few good people, aware of the material advantages which follow the development of such resources, but imperfectly acquainted with the Celestial character, have expressed astonishment that the government should never have decided to work them to their full capacity. Not that they have at any time remained entirely neglected in the ground; the gold and silver deposits in some of the various provinces have been worked by or under the supervision of the authorities. Iron manufacture is also carried on in many parts of the empire, and coal is mined in innumerable districts. But virtually the mineral riches of the vast, unwieldy country have remained undeveloped. The precious metals excepted, such minerals as are produced at all are for the most part produced only for local requirements, whereas if their winning were organised on a real commercial footing, the result would be to alter the attitude of China to the rest of the world in an almost revolutionary manner. This will perhaps be regarded as an extreme statement, but it is none the less true.

The main obstacles which have hitherto prevented any material progress in the development of China's mineral wealth are the apathy of the central government, which has never been solicitous for the welfare of the country so long as it has received the full sum of taxes demanded from each province; the rottenness of the provincial governments and the

blackmailing habits of the mandarins and other officials; the want of rapid and economical means of transit, and the lack of efficient machinery and intelligent supervision. In effect, whatever may be the case in theory, there is no well-defined system of land tenure—everything rests with the official classes; and so far from affording encouragement to prospectors, these classes have done the reverse by the arbitrary imposition or increase of excessive royalties to swell their own individual perquisites, superadded to enhanced transit dues on such products as are sent by river or overland to any considerable distance. The provision of railways, of which we have heard much talk recently, and of steamers on some of the principal rivers contiguous to the deposits, would go a long way towards removing the present obstructions; but every one who has made personal acquaintance with the ways of the provincial governor-generals and their subordinates will agree with me that any complete exploitation of the country's wealth is impossible until the reformation of its fiscal system. For instance, the maritime provinces of Pechili and Shantung, and the provinces of Hunan and Shansi, bordering upon them in the interior, contain stores of coal and iron, which, if they could be brought to the seaboard at a reasonably low cost of carriage, would drive all other coals—British, Indian, Australian, and Japanese—right out of the Eastern seas. But under existing conditions this cannot be done, and at present no more than a few thousand tons ever reach the treaty-ports in the course of a year.

Though one despairs of a complete exploitation, it is interesting to note that China has lately given indications of a recognition of the value to itself of its unworked minerals, metalliferous and non-metalliferous. It has sanctioned the grant to an English syndicate of a large tract of gold-bearing land in Manchuria; and in Hunan it has established a Bureau of Mines for the purpose of promoting and controlling the output of coal, iron, copper, tin, &c. In themselves these two concessions are of little account. But they are valuable in that they display a changed attitude on the part of the authorities, and therefore they are an encouraging augury for the future. If one searches for an explanation of the change, it will probably be found in the lesson taught to China by the war with Japan (not to speak of the intervention of Russia and Germany in Chinese affairs)—that Western methods count for more than the Celestials were before disposed to admit; and that future development must be made on lines at least suggested by Western methods, together with all that such a divergence implies. Save for the gold concession granted to the English syndicate, the mining of this metal, as well as of silver, remains for the present in the hands of the government. As to the richness of the land in gold, not much is really known, because of the absence of any systematic survey of those parts in which it is found, and the absence of any authentic data bearing upon the annual production. On the other hand, there are many known districts in which it is mined, and the quantity brought into the various gold markets of the interior and into the capital, where it is hoarded or converted into ornaments, is very considerable. The mountains that rise to the north of Pekin and stretch right to the Amoor are regularly worked for quartz and gravel gold, and some of them are so rich as to have earned for themselves the title of 'gold mountains.' In the south-western provinces of Szechuan and Yunnan there are more government mines. The river Kinsha, which rises in Tibet and ultimately becomes the Yang-tse-kiang, is known as the 'river of gold,' and its banks are regularly washed by the aid of primitive appliances which involve the loss of fully 75 per cent. of the gold that passes through them. Go into any province you choose—if the mandarins will allow you—and the people will tell you of places where they have found gold casually, or where it is worked for the benefit of the imperial owners and their Tartar satellites.

There are mines now at work only a few miles inland from Chefoo; and in the province of Shantung, of which it is the capital, there are other gravel-gold deposits at Kin-shan-sze, Moshan, the Saw Teeth Mountains near Tantzen, Tsai-hai-hien, Lai-Yang, and Kow-tew. There is not the same secrecy about the silver-mines of the empire, though they too, like the gold-mines, are worked either by the officials or under official supervision. Silver is, in fact, a form of money, and though it passes current in the form of *sycee* or shoe-blocks, mints for

its proper coinage have recently been established—another evidence of progress. Some of the principal mines are in Yunnan.

In Pechili it is worked near Ching-shui; at Mount Tsu, 4½ miles west of Lu-ling-hien, in conjunction with gold and iron; at Mount Yin-yen, north-east of Pekin; Si-lin, and Yuh-wang. In Shansi there are mines at a place called King-sau-pu, at Ngan-i-hien, and in the south near Ping-loh-hien; in Shensi at Mount Tsungnan (in company with iron and jade stone); at Mount Tu, 21 miles from Shangchow; at Mount Szeni; in Kansu-Ping-liang-hien (with copper), and also in Wha-ting-hien in the department of Pingliangfoo; and at Mount Ning-kwei, 9 miles south of Ning-yuen. It would be possible to enumerate other provinces which contribute to the annual total, but these are the chief. What the annual total is cannot be even approximately stated, because of the numerous contributions and the carelessness of the central government as to statistical records; but we are justified, on the basis of the vast quantity in circulation, in assuming it to be very large.

The researches of Baron Richthofen, Pumelly, and other geologists to whom facilities for investigation have been accorded, show that up and down the great disjointed empire are mines of tin, antimony, quicksilver, &c.—of course, in addition to copper, which is used for the staple currency of the country, and which has therefore been fairly well exploited, though there are many districts yielding this metal which have hitherto remained quite untouched. But in nothing is the country so rich as in coal and iron. The most conservative of the many estimates of the extent of its coal deposits puts the area at 400,000 square miles—which means that if all other sources of supply of this fuel were suddenly to fail, China would be in a position to meet the world's requirements, at the present rate of consumption, for some thousands of years.

We speak proudly of the coal-measures of Great Britain, to which in large measure we owe our unrivalled position as the world's workshop. But the coalfields of Great Britain are only 12,000 miles in extent. And it must not be supposed that all Chinese coal, or even a moiety of it, is of inferior quality, like the Indian and Japanese articles. The average grade of the bituminous coal of Hunan is quite as high as anything England can show; the anthracite of Shansi is equal to the best Pennsylvanian. These two provinces are the richest in coal, and in Shansi iron ore of a uniformly high grade is found in conjunction with or in close proximity to the coal. Other provinces are also favoured in this dual direction. Shantung, for example, has four coalfields of considerable extent, in addition to several minor ones. Black oxide of iron is so plentiful in the district twenty miles south of Tung-chow-foo that I have seen it breaking through in all directions. In other parts other varieties of iron ore have also been located. They are all conveniently situated for ready communication with

the sea if only the necessary means of transport were furnished. But the riches of Shantung are inconsiderable by comparison with those of the other two provinces.

Hunan has coalfields extending through two degrees of longitude and two degrees of latitude, and comprising over 21,000 square miles. There are two main beds—one of the anthracite, stretching along by the Lui river, and another of bituminous, stretching along the Siang river. Lui river coal is of uniformly high quality. The methods of mining it are primitive and involve great waste. Until the establishment of the Bureau of Mines there existed only the very vaguest notions of ownership. Any man was at liberty to work the deposits in a large way provided he was able to secure the consent of the provincial governor (which involved a liberal distribution of what is vulgarly known as 'palm oil'); and any native of the country round was at liberty to take from the ground as much as he required for his personal wants. This absence of proper appreciation of the value of the deposits has led to the opening of many shafts, which have invariably been abandoned before the extraction of one-tenth of the coal in them.

Both the Lui and the Siang rivers run into the Yang-tse-kiang, which traverses the province; and by means of this waterway Lui anthracite reaches Hankow, where it can be laid down at about three taels (say 10s.) per ton, of which one tael and a half represents cost of carriage. At present the coal is sent along the river in boats, and the cost on the way is swelled by transit dues. If these were abolished, and if deep mining were inaugurated with the aid of European machinery, and if, moreover, cheap steam freights were established on the great river, millions of tons of Hunan coal could be brought down to Shanghai at prices which no competitor could touch. It occurs in conjunction with iron ore of great purity; so that, under proper encouragement, a considerable manufacturing industry might be established in this rich and populous province.

Between Hunan and Shansi lie the mines of Lushan and Juchau, Honan-foo, Taihong-shan, and other districts of Hunan, which stretches from the Yang-tse-kiang to the Hoang-ho. This last river forms the southern boundary of Shansi, which has 630,000,000,000 tons of the best anthracite waiting

to be tapped. The coal-measures of this province are found on a plateau between 2000 and 3000 feet above the sea at its south-eastern extremity, and the main bed covers over 14,000 square miles. The average width of the seams is nearly 20 feet; the stratification is regular; and on all the edges of the terrace land, especially on the eastern side, the seams crop out, through the nature of the superficial configuration. A great advantage of this region is, that the eastern margin is on the slope of the plateau leading down to the Great Plain, which is intersected by navigable rivers, and capable of being cheaply provided with railways, and which is, further, capable of affording an untold store of the cheapest labour in the world.

The crowning merit of the Shansi coalfields is that, as in Hunan, iron is found abundantly in several strata of the coal-formation. The natives use only one kind of this ore—a kind that melts readily without the aid of any flux. A fairly large iron manufacturing industry is already carried on, and in spite of the crude methods of preparation, the product is of high quality—by reason mainly of the superiority of the raw material.

Just try to imagine for one moment the completeness of the revolution that would be effected by the introduction of Western works, equipped with Western machinery and appliances, into the heart of the great mineral-producing district of Shansi! Exercise your imagination a little more, and try to realise the change that would come over China, in its internal and external conditions and relations, if the government were suddenly to resolve upon an organised and determined endeavour to develop all the resources of the country, and were to carry out its resolve by the removal of all disabilities now existing, in the shape of vexatious internal taxes and jealous dislike of innovations, by the grant of direct mining licenses on reasonable royalties, and by the provision of rapid and cheap means of communication! Such a social revolution as this is a dream of the distant future, but it seems destined to be realised. Meanwhile a start has been made, and if the progress should prove to be slow, let it be remembered that, apart from its troubles from without at present, the government, under the peculiar fiscal system that prevails, is very poor.

'L I N D A.

CHAPTER III.—1896.



'OOK yer,' Twilight Ben urged persuasively; 'you're a tenderfoot, and I calkerlate you ain't got accustomed to the climate yit. I seen this yer run of ill-luck

kinder souring on yer fur some time, and I do allow that I don't jest hanker arter working on a grub stake myself; but,

durn my skin, I did think you hed more grit in yer hide thin to cave in jest becos you don't git a straight flush fust deal! Blame it, man, hump yerself!—toot yer horn!—Hail, Columby!—and we'll strike it rich yit!'

Thus, with his forcible eloquence, did the old rascal seek to turn his younger companion from his expressed purpose, for he doggedly

stuck to his belief that the luck was bound to change sooner or later ; and as Jim had shown 'he wasn't no slouch at shovelling-in the pay-dirt,' Ben viewed with distinct disfavour any proposal that threatened to interfere with his cold-blooded and murderous design of doing half the work and securing, by fair play or foul, the whole of the profits. Yet all his rude oratory availed him nothing.

'It ain't no use,' observed Jim wearily, when the one-sided conversation had gone on until after midnight. 'I dunno what it is, but there's a dead weight dragging me down. I've fit a'gen it until I can't fight no longer, and I've jest got to git back to Oloville right away. I guess I'll jest drop down to Fort Cudahy and see when they expect one of the Alaska Company's steamers up. You'll recollect that Cracker Harry said there was one expected soon.' And he made his preparations for his dreary ten mile expedition.

'Wall,' returned Twilight Ben, with the air of one who has exhausted all his arguments and accepted defeat in the discussion, 'I calkerlate I'll take another turn at the cradle fur a spell ; and by-m-by, ef so be ez you air minded to streak it back yer ez soon's you git the information, mebbe I'll meander down the trail to meet yer and git the latest news.'

So Jim started out for the fort alone ; but Twilight Ben, left to himself, betrayed no special anxiety to get to work, and the cradle knew not the touch of his hand that day. Instead, he sat in the hut, smoking and thinking, for an hour.

'Pears thar ain't no way of gitting the bulge on the young galoot with chin-music. I calkerlate I'll hev to play a trump keerd,' he soliloquised as he rose from his meditations.

Later in the day he started off down the creek, and half-way between their claim and the fort he met the returning Jim.

'Wall?' he inquired sharply.

'They say there's purty sure to be a steamer up early next week. So I guess I'll jest git my things together and tote 'em down to the fort and wait fur her.'

'Pard, I rather tuk to you becos I thought you was grit,' Ben went on solemnly ; 'and I'm disappointed. Still, you're white, and I like you, and ef you will throw up yer hand becos the keerds is a'gen us—wall, it ain't no funeral of mine, though it gravels me pesky hard to part with you ; and ez I'm going to hang on to this yer game myself till I strike a streak or I'm wall-broke, I calkerlate I'll pay you outer my share of the dust fur what grub thar is left.'

'Now I call that real kind,' Jim returned gratefully ; and during the rest of the way back to the claim their time was occupied in making mutual arrangements with regard to squaring up accounts.

'Gosh!' ejaculated Twilight Ben, with a start,

as they came in sight of their cabin ; 'I could ha' sworn I'd shet and locked that hut-door afore I quit. Ef thar's been any orner, durned, lop-eared greasers browsing round after the dust, by thunder, I'll shoot 'em on the fly ef I git on their tracks !'

With this savage threat he hastened forward, closely followed by Jim. At first, when they had commenced to work their claim, such a crime as the old miner suggested would barely have been possible, for other claims were being worked contiguous to their own ; or if even an attempt had been made, it would have been almost certain to have been instantly detected, and the culprit, probably, promptly lynched ; not from any fine sentimental sense of justice (which is an extremely rare exotic in mining camps), but from the pretty unanimous instinct not to allow a mere trifle like sending a sin-logged soul, unrepentant, to his Maker off-hand to interfere with the individual desire of each man to secure as far as possible the safety of his own treasure. Now, however, since the rush to the Sixty Mile had practically emptied the creek of its restless population, bluffs hid the claim from its nearest neighbours above and below, and thus gave any thievishly-inclined party who might find the hut temporarily unoccupied the opportunity to attempt a little enterprise with reasonable hopes of impunity.

As the two reached the hut a glance was sufficient to show them that the lock had been smashed and the door burst in by force. Just inside the threshold they stopped. The interior of the hut was a den of confusion. Here and there the floor had been scored and pitted with the pick of the marauder in his unholy prospecting.

'Look !' exclaimed Twilight Ben hoarsely, pointing to the farthest corner.

But Jim Vickerson had already looked. A few shovelfuls of loose earth lay piled upon the floor ; the hiding-place was laid bare, and the old tomato-tin that held the whole of their scanty store of hard-won dust was gone. With half-raised hands and round, staring eyeballs, he stood rooted to the spot, glaring in mute agony at the empty corner, oblivious of the presence of his chum—oblivious of everything save the fact that he was now a prisoner in a lone land, far from her whom his weary heart hungered for.

With a savage oath Twilight Ben sprang to the corner, and, dropping on his knees, scratched with his fingers like a dog among the loose earth. A minute sufficed to show the futility of such a search. Then Twilight Ben rose to his feet, and lifted up his voice and cursed. From gulch and mining-camp, from forecastle and gambling-hell, from ranch and saloon, the hoary old sinner had gathered in a stock of profanity such as would have awed the veriest ruffian of the Bowery into

speechless wonder ; and now the reservoir of his blasphemy burst its bounds, and gushed from his lips in one continuous, appalling avalanche. Mexican oaths jangled fiercely against deep British curses ; anathemas and execrations from every land and every clime trod wildly on the heels of one another, and the unhallowed slang of mining-camp and ranch rounded off the awful deluge into one incessant stream. And yet Honest Jim heard never a word of the awful abuse. His unwinking eyes stared straight before him. His half-raised hands had neither risen nor fallen a fraction of an inch. He was turned to stone—ice—anything that is cold and immovable.

At length the torrent of fierce invective ceased—ceased because of want of breath—and the old reprobate sat down, gasping, on an upturned bucket and looked at Jim. Still the latter maintained his dazed, petrified pose. Twilight Ben had never seen a man take a misfortune like this, and his one piercing eye fastened on the strange sight. By degrees a feeling of unaccountable uneasiness began to mingle with his curiosity. He got up and kicked the iron bucket over with as much racket as he could conveniently get out of the operation. Yet Jim gave no sign. This unprecedented state of things was intolerable. For a few seconds Ben cogitated ; then, unable to bear the oppressiveness of it longer, he strode up to the statuesque figure near the door, and digging it in the ribs, jerked out querulously :

‘Say, pard, ain’t it ‘bout time you started in to cuss?’

The touch recalled Jim to his senses with a violent start. His hands dropped listlessly to his sides, and he blushed like a boy of fourteen detected in the act of writing a youthful love-letter to a schoolmate’s sister.

‘Say, pard,’ the other repeated, ‘ain’t you going to cuss?’

‘No,’ replied Jim slowly and solemnly ; ‘I’m—going—to—pray !’

And there, in the centre of the comfortless hut, on the cold, hard earth, with no stuffed hassock or softly-upholstered *prie-dieu* to lessen the irksomeness of *devotion*(?), he fell upon his knees and stretched out his clasped hands before him in earnest supplication.

Once, when, during a brief industrious spell, he was trapping in the Rockies, and was sitting alone in the tent, a shadow fell upon him, and turning round to greet his returning chum, he found himself hugged by a grizzly, Twilight Ben had been surprised. Still more surprised was he when, after a desperate struggle, he came out of the encounter alive and comparatively unhurt. Then, in spite of his extensive vocabulary and his abnormal skill in using it, words suitable to the occasion failed him. They failed him now. The bewildering unexpectedness of Jim’s speech and simultaneous action staggered him. His

sightless eye-socket opened, and the turned-up half of his moustache bristled like the quills of a porcupine at bay. Instinctively he gave one sobbing gasp of astonishment, and waited for what was to follow. And as he waited, with his gaze riveted on the kneeling figure on the ground, his wonder grew, for he expected to hear Jim fiercely beseech the Lord to restore the lost treasure, and pour out all the vials of His wrath upon the head of the thief ; but no such vengeful petition came from his lips.

No gib string of stereotyped pious phrases came gliding from his tongue. For a few minutes he knelt there silently struggling—not praying—to shape his unwieldy thoughts. Then came, slowly, brokenly, the first words, uttered laboriously. His big breast heaved, his clasped hands clutched each other with an iron grip, and the perspiration trickled down over the knotted veins on his temples, as he literally *wrestled* in prayer—not for himself, not for the lost gold, but for the sinner who had wronged him.

Twilight Ben grew uncomfortable. Once or twice in his career he had heard at camp-meetings and revival services, to which curiosity had led him, evangelists pour out loud, voluble, and sometimes incoherent forms of supplication and praise ; but never before had he witnessed a human soul in the painful agony of desperate, earnest prayer, and it awed the brute within him. Without knowing why, he took off his hat, and spat on his hands and rubbed them on his corduroy trousers to make them cleaner. He fidgeted uneasily as his discomfort increased, and took the quid out of his mouth and held it in his hand. The situation pressed tighter and tighter upon him, until he could bear it no longer. An indefinable dread seized him.

‘Blamed ef’ ever I knew I was so tetchy afore ; but this yer gospel-jerking, when they git down to wrastling with the bed-rock, ruther gits the bulge on me,’ he muttered uneasily to himself. ‘I calkerlate I’d better jest vamoose to the ranch.’ And he quietly silded out of the hut.

Once out in the open, he felt that he could breathe more freely, yet he remained standing near the door, where he could both see and hear the earnest suppliant within, as he strove, haltingly and disjointedly, to plead that the transgressor might be snatched from the clutches of sin ; and when at length Jim rose to his feet and turned towards the door, Twilight Ben, with a feeling of inexpressible relief, jerked his plug back into his cheek, clapped on his hat, and sauntered away towards the workings.

It was another Jim Vickerson—more like the old one—that strode out of the hut. A great and evident change had been wrought upon him. The sudden shock of greater misfortune had shaken him free from the toils. The leaden glamour of that weird, monotonous

region no longer enchain'd him. Home-sickness and the depression consequent on unrewarded labour had fled from him, and he was himself once more—strong in determination to win a home of ease and a life of happy comfort for the little 'Linda' that was waiting for him in the flower-twined schoolhouse far away over the dreary plains and terrible fastnesses.

As he gained the open air Twilight Ben had reached the top of the shaft. While looking moodily down, the foot or two of earth upon which he stood suddenly gave way, and he disappeared. As he fell one side of the pit caved in; and when, with a cry of horror, Jim reached the spot, nothing was to be seen at the bottom of the shaft but a mass of loose gravel. Snatching a shovel, he leaped down upon the fallen heap of débris, and worked as he had never worked before to shift the rubbish. It was slow—terribly slow; for the best he could do was but to shift the stuff from one side to another, and all along the thought haunted him that he might with his own weight be trampling the last remnant of life out of the comrade he was working to save. Minutes dragged slowly by. An hour had passed, and his frenzied efforts redoubled themselves. At length, while pausing for a moment to wipe his streaming forehead, he thought he heard a faint, muffled sound like that of a human voice. He listened intently. It was his chum's, and it came from the direction of the tunnel, the entrance to which had been covered by the fall. With a definite guide now to direct him, Jim fell to work again with brighter hopes. In another quarter of an hour the entombed miner was released, little the worse for his imprisonment. Luckily for him, he had fallen with his head and shoulders inside the tunnel, free of the weight of earth that held his body and limbs immovable, and so had escaped suffocation. The shock had, however, knocked him senseless; and it was when he cried out, as soon as he came to himself, that Jim heard him. With no bones broken, a few hours' rest in his hammock soon put him right again, except for a stiffness and soreness that lasted for some days to remind him of his narrow escape.

As may easily be supposed, when Jim turned into his bunk some hours subsequent to the rescue, what with his journey to Fort Cudahy and the experiences he went through immediately after his return, he slept the heavy sleep of the wearied. On awaking he noticed the hide in the corner of the hut had been restored to its usual state of studied unsuspiciousness, and the end of a log laid negligently over it. The older miner was out. Jim examined the spot closely. The old tomato-tin, with its golden contents, had returned to its place. Jim went out and joined his partner at the cradle. Together they worked for hours, mostly in silence, and not a word passed on the subject that was uppermost

in both their minds, until Twilight Ben suddenly dropped his shovel and abruptly strode across to the other. For a minute they stood facing one another without a word. Then:

'Say, pard, did yer savvy (*Anglice*: know by perception) who the durned skunk was who stole that thar dust?'

'Wall, I kinder guessed,' Jim replied, with a quiet smile.

'Then why the tarnation did you scratch me outer that landslip fur, when you knowed I'd been playing it low down on you like that?'

'Cos I reckon I couldn't do no other.'

'You—couldn't— Dog my cats ef you ain't the durnedest, queerest cuss I ever come across!' exclaimed Twilight Ben. 'And I like you! Put it that!'

Jim took the proffered hand in his. The firm, hearty grip betokened the commencement of a new era in the partnership of the curiously matched pair. And so the evil scheme passed out of Twilight Ben's warped brain, and he had no longer any thought to work the young man harm.

The brief summer was quickly passing away, and still no sign of luck came their way. Twilight Ben himself had arrived at the conclusion that it was folly to waste any more time in working their claim on the Forty Mile, when it suddenly became known that prospectors had struck it rich on the Bonanza Creek. The information was quickly verified, and the Klondyke leapt into local fame as the new Eldorado. Unfortunately the coming winter was already within measurable distance, and provisions were none too plentiful. Many of the miners in the latest-discovered field would—rather than face another winter of darkness and privation that killed several and drove others stark mad—after working their new claims for a few weeks, drop down to Circle City for the long, dreary spell of icy darkness, to relieve the tedious hours with gambling and bad whisky. As for Jim and Twilight Ben, they spent the whole of their dearly-got gold at Fort Cudahy in buying provisions at exorbitant prices; and packing up-country, they staked out their new claims well up towards the head of the Bonanza, and determined to fight out the winter there on an insufficient larder, in the hope of killing a stray moose or bear to help things along. Their first prospects were encouragingly successful, showing two to four dollars to the pan; and by the time the river closed and the winter set in they had washed about three thousand dollars. With a good heart, confident now that they were not wasting their energy in digging worthless rubbish, they faced the trying ordeal, and occupied themselves, as they had done the previous winter, in throwing up a dump of the ice-bound pay-dirt in readiness to be washed as soon as the returning sun should release the water-supply.

SOME NEW USES FOR PEAT.



MOST everybody knows that from time to time articles have been discovered in peat-bogs strangely preserved; but it was not till lately that people began to think that this strange preserving power in peat might be put to some use. The first trials made were simply with peat in the form of powder, and it was found to be so effective that several experts looked into the matter, and after long and arduous experiments, made what is now so well known as peat-wool dressing.

This surgical wool is extremely absorbent—in fact, much more so than ordinary wool, although somewhat slower in absorbing the liquids; and it is predicted that there is a big future before it, especially in army surgery, where its small bulk makes it very convenient for transport; and its deodorising power is great.

Another product of peat is a roughly-woven material manufactured from the fibres which may be seen running through a mass of peat. This cloth is much used for felt and undercarpeting, as there seems to be a property in this fibre which is very antagonistic to the life of animals and insects of all kinds. People who have examined this material have expressed their astonishment that such a strong and useful cloth could be made from the apparently worthless peat.

A further development is the compressing the peat into solid blocks, so hard that it is with the greatest difficulty they can be turned on a lathe; indeed, they very often blunt the edge of the finest-tempered tools. These blocks can be so polished that they resemble finely polished oak, and in gloss and colour they are far more beautiful.

A well-known Continental firm (Messrs Brion, Pate, Burke, & Co., 4 Rue de Frerise, Paris; the London agents being the Peat Industries Syndi-

cate) has, within the last few months, brought out a very ingenious application. 'Peat flannel'—for so it is called—is a fine, delicately shaded flannel, containing a considerable portion of peat in its contexture, and, as far as hygienic qualities are concerned, is said to be far superior to many of the so-called hygienic flannels now in the market, besides being very suitable for all outdoor sports. It is extremely deodorant and absorbent, and seems likely to become very well known in a few years.

Moss litter for horses, &c., is highly prized by farmers and horse-owners for its healthy and sanitary properties. Peat charcoal is valuable in iron-smelting and in tempering cutlery; and admirable flower-pots are made of compressed peat. Petroleum or paraffin is distilled from peat.

Experiments have also been made as to the effect peat has on micro-organisms, and it was found that although peat can hardly be called a germicide, still it possesses the power of considerably retarding the propagation of typhoid and cholera germs.

Anything likely to encourage the utilisation of peat, which opens up a way for the development of the now almost useless peat moors and bogs throughout Great Britain, would be looked upon as a blessing by the owners of these lands.

Tennyson, it will be remembered, founded his Irish poem 'To-morrow' on a story related to him by Aubrey de Vere, which ran as follows: 'The body of a young man was laid out on the grass by the door of a chapel in the west of Ireland, and an *old woman* came and recognised it as that of her young lover, who had been lost in a peat-bog many years before; the peat having kept him fresh and fair as when she last saw him.'

THE FRENCH INVASION OF 1797.

By CHARLES EDWARDES.



ITH 1897 just behind us, we can afford to laugh at the French invasion of England in 1797; but our ancestors, for a day or two at least, thought it no laughing matter. The 3 per cent. consols stood on Friday the 24th of February 1797 at 52½. The next day, after the publication of the *London Gazette Extraordinary* with news from Haverfordwest of the Fishguard landing, they fell to 50⅓. That same evening, at a council held in Mr Pitt's house, it was decided to send a messenger immediately to Windsor, to request the king's attendance. His Majesty was present at

the Sunday council, and London's excitement in this unique event was intense. Money payments at the Bank of England were to be withheld; and, in sympathy with the wishes of the Cabinet council, there appeared in the *Times* of Tuesday the 28th no fewer than six columns of names of merchants and bankers appended to the undertaking 'that we will not refuse to receive banknotes in payment of any sum of money to be paid to us.' By then, however, the scare was over. Even on Monday consols were up again to 52⅓. The following authoritative intimation from Haverfordwest, under date February 24, 9 P.M.,

had tranquillised both the Cabinet and the City: 'I have the honour and pleasure to inform your Grace (the Duke of Portland) that the whole of the French troops, amounting to near 1400 men, have surrendered, and are now on their march to Haverfordwest.' The invaders had had their chances, and had misused them.

The scene of the brief yet stirring event was the rough, rectangular promontory of Pen Caer, in Pembrokeshire, bounded on the west by the bold purple cliffs of Strumble Head. In rough weather this part of the coast was eminently unsuited for an invasion. But Tuesday the 21st has been described by a Pembrokeshire worthy of the period as 'the finest day ever remembered at such a season, when all nature, earth, and ocean wore an air of unusual serenity.' The three frigates, with their cargo of six hundred regular French troops and eight hundred so-called convicts, passed St David's flying English colours. As British vessels they were about to be saluted by the fort at Fishguard when they sailed into the mouth of the bay. But Fishguard was spared this humiliation by the sudden change from British to French colours. After this the vessels drew back a little, and finally anchored off the rocks of Carreg Gwastad Point. A St David's gentleman had watched the vessels suspiciously, until his suspicions developed into certainty. He was an old seaman, and he believed the ships were French, and that the troops on board were for local aggressive purposes. He raised the district, so that, while Fishguard was taking measures to secure its property and obtain troops, St David's was mustering bravely for attack, and even stripping the lead from its cathedral roof for the blacksmiths to mould into bullets.

Under the command of a certain Irish-American named Tate, the invaders made a very vigorous beginning. Their landing-place was not sufficiently secure for an encampment. The men therefore pushed on to the little white-cottaged village of Llanwnda, a constant rise from the sea-level, and passing its village green (doubtless then as now the resort of the local gossipers, including droves of garrulous geese), climbed the rocky plateau on the other side. They did more. They dragged casks of ammunition with them, and made all ready for holding a fairly defensible situation. If Tate could have kept all his men as well disciplined as these workers, he might have made a strong show even against Lord Cawdor's forces. But while some were thus perspiring in the darkness, others were dispersed about the rugged headland, which was, and is, far more populous than the nature of the soil would seem to justify. Farmstead after farmstead was entered and sacked. The Llanwnda geese were especially attractive to the invaders. 'Not a fowl,' it is said, 'was left alive, and the geese were literally boiled in butter.' As it happened, there had recently been hereabouts the wreck of a vessel laden with wine. One result of this was

that the Welshmen's cottages were all surprisingly blessed with good liquor. The sequel was of course inevitable. One after another General Tate's precious crew became very drunk, and the majority unmanageable besides. Mr Fenton, the county authority already quoted, tells us that 'the veil of night was kindly drawn over their execrable orgies, disgraceful to nature, and which humanity shudders to imagine.' Really, however, nothing so inordinately dreadful seems to have occurred. At least there is no circumstantial account of the invasion which it revolts one to read. The first report, in the *Times* of February 27, is not of a very sanguinary kind. We learn that the very children of Pen Caer took up reaping-hooks and abetted their parents in defence of their property. Four Frenchmen are then said to have been killed —two by a father and his son, who caught them helping themselves to calves in a stable; and a third having been dismally run through with a pitchfork 'while regaling himself with ale and bread and cheese.' By then the mortality among the Welsh was two only. And, as a matter of fact, this about represents the whole loss of life in the affair. What would have happened if Tate could have kept his men sober, and marched them promptly over the hills and down to Fishguard (which was quite worth sacking), one can, of course, only conjecture. The pretty little town was then a place of fair importance for its trade with the Mediterranean in cured red and white herrings, and there were country-houses hard by, including Mr Fenton's, which would assuredly have yielded better spoil than the stumpy white homesteads of Pen Caer.

The drinking and the boiling of geese in butter went on gaily enough throughout Wednesday. Tate must then have seen that it was all up even with his chance of leaving a memorable mark on the neighbourhood. He was at Trehowel Farm, whither he had been led by a Welshman named Bowen, who 'was with his troops, and who had formerly worked on the farm. Like his men, he lived freely on the produce of his environment. Not content with eating the hams and geese, he 'eviscerated the feather beds for the sake of the tick, burnt the furniture, and left a mere shell to greet the return of the proprietor.' At another farmhouse one may still see a grandfather's clock with a bullet-hole nicely middled in its case. A tipsy Frenchman shot it, presumably taking its pendulum for the tongue of a challenger. Llanwnda church was bound to suffer. It is an ancient little building, with heavy arches, an old font, and some interesting decorated stones embedded in its outer walls; and in its churchyard are a surprising number of mortuary tablets to master-mariners. But it was not likely to yield much plunder. One of the French officers laid hands on the church plate. The chalice in use is the one that thus suffered some slight vicissitudes. It is much cracked and dented, and bears the in-

scription, 'Poculum Ecclesiae de Llanwnda.' After the failure of the invasion, its purloiner offered it for sale in Carmarthen, with the feeble lie that the word 'Llanwnda' stood for 'La Vendée,' of which royalist district of France he declared it to be a relic. But the Carmarthen silversmith was not thus deceived, and eventually the little church came by its own again. As for the rank and file of the invaders, aggrieved by the nakedness of Llanwnda church, they destroyed all in it they could lay hands on, and set fire to the pews and other combustible matter. From a hiding-place above the rood-loft a nursemaid and child peeped down upon the depredators, no doubt with misgivings. But they were not burned to death, nor did they fall into the hands of the tipsy ransackers and suffer as probably they expected to suffer.

There are tales extant of the wonders wrought by the local peasantry in defence of their homes. The heroism of Jemima Nicolas is a case in point. This sturdy damsel, armed only with a pitchfork, advanced against twelve Frenchmen. Her tongue and the pitchfork conjointly prevailed over the twelve, so that she had little difficulty in leading the dozen prisoners to Fishguard. But who except a Welshman of Pen Caer is likely to believe such a yarn as this? Again, there is the picturesque story of the muster of Pembrokeshire dames on the adjacent hillsides. In their red woollen 'whittles' and tall hats, they were of course a very fair imitation of fighting-men; and as such they are said to have marched and countermarched before the eyes of the wine-sodden Frenchmen. This at any rate is moderately credible, if we assume, as we may, that the ladies wore their skirts as short as some of the Welsh peasant women are accustomed, in their daily vocations, still to wear them.

After all, however, circumstances unaided were the worst foe Tate and his men had to fight.

The invasion soon proved a farce. The camp that was formed on the Tuesday night had lost its importance by Thursday. The Frenchmen had eaten their vicinity bare, and Lord Cawdor, with the Castle Martin yeomanry, the Cardiganshire militia, two companies of fencibles, and a scratch lot of volunteers, was approaching the marshy lowlands between Fishguard and the pleasant little modern pleasure-resort of Goodwie, on the Fishguard side of Pen Caer. A strange new calamity precipitated matters: the three frigates sailed away to the north, leaving Tate to enjoy his conquest or his calamity by himself. And so, on the Thursday evening, the Frenchmen tried to treat with Lord Cawdor. But no terms were admissible. His lordship proposed to attack the Llanwnda camp with ten thousand men unless the invaders laid down their arms as prisoners of war. An effective little brag like this was permissible enough, and no wrong is done to the Fishguard fencibles and the rest in the supposition that they were all very relieved when General Tate, after an anxious meditative night, marched down to Goodwie sands on the Friday morning and surrendered without bloodshed.

The subsequent fate of the captured Frenchmen need not be dwelt on. Some were sent to Pembroke Castle, where five-and-twenty escaped in Lord Cawdor's own yacht, having first won the tender hearts of the women who looked after them, and then burrowed some sixty yards through the ground. It was not well to be a prisoner of war in those days. Nevertheless, we prefer not to believe the tale told about certain other of these invaders confined at Porchester Castle, in Hampshire. They are said to have laid hands on Lord Cawdor's horse and eaten it when he one day paid them the civility of a visit. It was surely enough that his lordship should have his yacht pilfered without having his horse cut into steaks and collops.

GAS-WORKS MANAGEMENT AND CONSUMERS' INTERESTS.

BY A DIRECTOR.

HERE is undoubtedly very much misconception in the minds of gas-consumers everywhere on subjects concerning gas-works, such as the management thereof generally, and the relation of the gas industry to its customers. Gas-men are usually considered to be prejudiced; but when one is both a householder and a gas-consumer in the same district, some degree of accuracy and impartiality may be claimed herein.

A gas company is a concern constituted primarily to supply a public necessity—namely, light during the hours of darkness; and latterly gas has become a household requisite for cooking and heating purposes, and is also extensively used for

motive-power. Most of the existing companies were formed many years ago in the comparative infancy of gas-lighting; and as progress was then very doubtful, the money required for promotion was generally difficult to raise; hence the high rate of interest that was allowed by parliament. The argument of 'bloated dividends' still holds sway, and is even now a sore point with consumers; but these are relics of the past, and are practically not the happy experience of shareholders of to-day, whose holdings have been mostly acquired at market prices, and consequently do not realise the high rate of interest they bear upon their face. This rate is undoubtedly high when viewed in the light of present experience; but all honour must be accorded to the pioneers

of this industry who risked their money in a doubtful venture, the grand success and brilliant future of which nobody could foresee, and we should not grudge them their good fortune. Many concerns groan almost under the weight of a comparatively heavy capital charge, but that cannot now be helped, and we should quietly bear our share of the burden (if it can be so called in the light of what follows), that of our predecessors having been a natural anxiety as to their investment.

Constituted by act of parliament as a rule, a gas company is confined within limits not generally understood nor recognised. It may pay its statutory dividends, but the price of the commodity to be charged to the consumer must not trespass beyond a certain point. After paying its full dividends, keeping the works in good order and repair, and setting aside gradually a reserve fund, all further profits must go to reduce the price of gas. Quality is also determined, a penalty being sometimes attached for defect therein. As a rule an aggregate amount, equal to ten per cent. only on the prescribed capital, can be retained out of profits to form the reserve fund; and that fund can only be called upon for certain specific purposes. Also, generally no depreciation fund is permitted; so that quality is defined, and dividend and reserve fund are absolutely restricted—everything, in fact, being regulated to the ultimate advantage of the consumers.

It will thus be seen that consumers have a direct, and by no means insignificant, interest in a gas company. Thirty years ago the price charged for gas may have been ten shillings per 1000 cubic feet; whereas it is now possibly only three shillings and sixpence to two shillings; in large, thickly-populated towns even less, according to the district. This means that, comparatively, consumers are obtaining nowadays for the same quantity of light practically a dividend equal to a high rate of interest on the amount of their annual accounts, with no more serious capital outlay than the cost of fittings; or are able for the same money to have a lighting capacity for their premises two or three times greater than formerly. The greater the consumption of the district, the more economically is gas produced; and the surplus profit thereby realised belongs, not to the shareholders, but to the consumers. Sometimes a sliding-scale is in operation, whereby the shareholders get so much increased or decreased percentage of dividend, according as the price of gas is lowered or raised beyond a certain fixed standard. But, generally speaking, the consumers of to-day have obtained all the innumerable advantages of economy of manufacture, of greater science and skill, of the introduction of machinery, and of cheap coal that have for many years been in evidence; so that almost without exception the price of gas everywhere is at the lowest point it has ever reached, a consideration which is entirely in the consumers' interest. Thus, whilst the gas

industry is decried as a 'monopoly'—which means, in other words, that the shareholders have obtained all that was legally due to them, and nothing more—consumers have year after year reaped all the benefits of cheaper production, and are therefore to all intents and purposes partners in the concern, participating largely in its progressive prosperity.

Moreover, what has the Welsbach incandescent system done for the consumer? The writer's experience is, that one such burner does the duty of three ordinary burners; and as it consumes so much less gas than one ordinary burner as, with a certain amount of care, will pay the annual cost of renewals of mantles and chimneys, it follows that the same amount of light may be obtained therewith at one-third the cost of former years. The 'care' referred to consists principally in the manner in which the mantle is at first fixed, and a little personal attention thereto will be found to pay best generally.

In connection with such economy of lighting as is claimed by the above system, and having regard to the competition of the electric light, it may be pertinently asked how, in the extensive adoption of both these systems which undoubtedly obtains—the first reducing, and the second substituting, consumption of gas—gas-works go on prospering and increasing their production, as seems to be the case. There is little doubt that in a well-regulated household—and such, let us hope, are in the majority—the chief allots so much annual income to the gas bill; and when that is found to be on a moderate, and perhaps decreasing scale, then is considered a fitting time to put up a heating or to introduce a cooking stove. So the consumption of gas is kept at its normal quantity, or is even allowed, on account of these facilities which economise in other directions, to exceed that; but the bill, owing to continual reductions in price, remains practically the same. Undoubtedly a heating or cooking stove, when well fixed, is very clean, serviceable, and economical, provided it is not allowed to be used wastefully.

The gas-man, whether director, manager, collector, or what not, must have a very broad back, and be prepared with equanimity to be termed liar, thief, rogue, or such-like; he is fairer game than almost any other, and is 'shot at' without mercy or compunction all round. The director is generally considered to be one who has little to do, and gets well paid for doing the same as badly as it can be done. He seems to delight in causing the greatest amount of exasperation to a wide circle; it is his business almost to defraud the public in as legal a manner as possible, and to carry out that policy of 'grasping rapacity and extortion' with which all gas companies are credited. He has even been accused of supplying better gas to his own house than to adjacent premises. The manager, who is also usually

engineer, is the individual who invariably makes a bad article, and sits comfortably in his office, or perhaps on the top of the governor—not the chairman, by the way, but the instrument for regulating pressure throughout the district—driving gas through the meters attached to the houses in his domain whether consumers are willingly utilising it or not. His one other duty perhaps is to see that the quarterly bills are made out sufficiently large from figures mysteriously supplied by the myrmidons sent abroad to read the meter indices.

If it is possible for the average gas-consumer to believe one of the above-mentioned public (but hitherto unpunished) criminals, let me state briefly what are the true facts in connection with these much-despised, wholly-unappreciated public servants. The director always stands immediately between two fires—the shareholders on one side, and the consumers on the other. Elected by the former, who live perhaps mostly miles away from the district, he is expected regularly to furnish the full statutory dividend, to see that the works are kept in good order, and to provide a decent annual statement. So long as these matters are right the shareholders are satisfied. Directors must necessarily consider shareholders' claims first and foremost, as required by act of parliament, other things being equal, and because they are their officers. But, on the other hand, directors must, and do, carefully consider the consumers' interests. They must be shareholders themselves, and most frequently they are consumers also in the same district; so that from a purely personal point of view they are directly interested both ways. They do strive from various motives, and in divers ways, to keep down the price of gas. When a reduction (say of threepence) is made, they get no thanks; the concession is swallowed as a thing that ought to be, or rather ought to have occurred long ago; but let them raise the price by so little as a penny, and at once there is a howl of execration from all sides, no matter what the circumstances may be that cause the necessity for this unhappy incident. Gas never is too cheap anywhere; if it were given free of cost, it would always be at least bad. The excess profits over the dividend of any year belong by right to the consumers, and must be utilised when sufficiently ample to reduce price; and directors do think a lot of those profits, superfluous as to dividend, in connection with the consumers. A reduction of a penny in price seems, and is generally considered by the public, to be a trivial thing; its real value should, however, be estimated by the wrath and indignation with which an increase of a similar amount is received. Also, it is not remembered that such reductions, following one another year after year, amount to a respectable item in the course of a few years; nor that reductions have been for a long time the rule, whilst increase has been very exceptional.

The above remarks concerning the director will apply also to the manager; if there is any difference, it can only be to emphasise them in the latter case. The director may be waylaid and brow-beaten, but how much more the poor manager! Whilst bearing the burden and heat of the day in connection with his particular profession, he has to listen with patience and forbearance to the individual complaints of all those ills with which gas apparently is afflicted, at least in the opinion of a certain number of people. This is no light task, for with many it is impossible to argue. You may explain that the fault may not be altogether in the gas itself, but with some degree of probability in connection with fittings or burners, but in vain; the gas is abominable, and the way it runs through the meter is a deep mystery! My opinion of the gas manager is briefly this: however small the works may be, he must understand his business, must have had therein a certain amount of experience. Beyond these qualifications, you will frequently find him intelligent, sometimes even clever and ingenious, enthusiastic in his duties, generally on the lookout for some improvement in the details of his work; and if he does not sympathise with his customers in their troubles and help them in their gassy difficulties, such an one may be considered generally an unsuccessful man. This is particularly the case with companies; when corporations own the works, all the officials are more independent in every way.

It is the best policy of directors to order, and of managers to make, gas good in quality, not only as regards illuminating power, but also in point of purity; and this is usually the policy adopted. If the quality varies by two and a half per cent.—which may be taken to mean half a candle, an almost extreme variation—it is sure to be heard of at the works. Many things may cause unintentional deviation from routine, such as unexpected sudden demand from one cause or another. But complaints of 'bad gas' nearly always arise from defective fittings or worn-out burners. Burners require changing occasionally; new ones should be obtained from the gas office. The truth of this remark may be verified by visiting a few houses on the same night in the same district, or sometimes even by examining in one's own house the gas in different rooms; a variation will almost certainly be discovered more or less pronounced, which can only be accounted for as has been suggested, for it is the same gas, but it is evidently not obtaining the same equal chance everywhere. Many companies by their special act are allowed to supply gas at as low quality as fourteen or fifteen candles, whereas in order to meet the requirements of their district they actually make their gas up to eighteen or nineteen candles. For this they get no credit; but as a matter of fact each candle extra costs from a penny to three-halfpence, according to

locality, so that many companies could 'reduce price' by sixpence by adhering strictly to the letter of their constitution. A gas richer than eighteen candles is unnecessary, and unless such is used through special burners there is much waste with it, and consequent loss to the consumer.

'Dear gas' is a chronic complaint. A scattered country district, with miles of only partially productive mains, is inconsiderately presumed by many to be in the same position to obtain gas from its local works as a town with its streets of closely-built houses, shops, workshops, &c. One hears regularly the pathetic lament that in the country gas is three shillings and sixpence, whereas in the adjacent town it is only two shillings and sixpence. Comparatively the former price may be much the cheaper, if due regard is given to the differing circumstances of the two cases.

The meter is a thing that no gas-consumer can understand, except when the bill is smaller than anticipated, owing perhaps to difference of weather, which is an important factor in the case. If the bill is larger than usual, the gas has certainly not been used, and something must be wrong with the meter! From the commencement of housekeeping, when the writer had no direct interest in gas matters beyond a consumer's, the following plan was adopted, and has since been carried out methodically: every week the meter index has been read and noted, and the weekly variations have been weighed up and accounted for. That cannot be accomplished at the end of the quarter, for one cannot remember the weather variations, the differences in the days' shades of light, or perhaps the dinner-parties, and so forth, any of which make a lot of difference between one corresponding quarter and another. During all this time not one single error has been discovered in the accounts. Much waste occurs in the household unless a certain amount of care is exercised; servants will leave too much gas turned on when it is not required, and in their rooms they are generally reckless and extravagant with gas, especially if no notice is taken of the matter by the mistress. The gas bill is like the proverbial red rag in front of a bull: it never satisfies the average consumer as to its accuracy, and the moment of its arrival frequently disturbs the domestic peace. The writer can only repeat in its favour that he never at any time found an error in his accounts. Meters are wonderful but reliable machines, that do their work on the whole in a fair and honest way; if they are considered to be out of order, the consumer can have them tested free of charge when discovered to be erratic.

The discount system is in vogue in some places, and is generally successful, but occasionally generates discontent among the few who by their own carelessness miss getting it. If the account is paid by a certain date, so much discount is allowed therefrom. The date must be

strictly adhered to, in common fairness to the majority who take the trouble to pay in time. It is usually attributed to the company, when they refuse to accept any excuse from a delinquent, that they are unbusiness-like—whereas the boot is really on the other leg—and that they are advantaging themselves pecuniarily by their sharp practice; when, as a matter of fact, all discounts so forfeited may be practically considered as items which go to assist a future reduction in price. The system involves no more inconvenience to consumers than the call of a collector, perhaps several times repeated, was wont to do; and is a matter of great economy to the company, again to the interest of consumers, to whom it means perhaps a reduction of a penny in the price of gas by the saving effected.

Little need be said here as to the competition of electricity with gas. Experience has proved it as a fact, whatever may be the reason therefor, that wherever electricity has been introduced, gas consumption has increased rapidly. Gas remains the economical light of the country, for unquestionably it is much cheaper than electricity so far, even when all the advantages claimed for the latter are taken into account; whilst electricity may be viewed sometimes as a great convenience, yet always as a luxury. There is undoubtedly room for both in the world, and the competition between them is a healthy one. It is an interesting struggle between these two great producers of artificial light, and the issue is by no means yet narrowed down to the question of the survival of the fittest. So far, where both come into direct competition, there is simply a matter of choice between the two, each perhaps possessing distinct advantages for individual preference; at least the general or final result must be universally beneficial. Electricity has probably the largest area for experimental research and improvement.

On the whole, it may be claimed for gas companies that for very many years they have supplied a necessity of the times; that they have been good and useful public servants; and that they have done, and are doing, their duty by their customers, just as much as by their shareholders. And the point most desirable to emphasise is, that they are well-regulated, progressive commercial enterprises, directed and managed on sound business principles, not altogether nor exclusively in the interests of shareholders, as the idea so generally seems to be, but to a very appreciable extent with regard to the interests and for the benefit of their customers. In short, gas companies to-day are not the 'absolute and perpetual monopolies' of bygone years, if only for the weighty reason that the total economies that have brought the price of gas everywhere down to its present low point have been thereby appropriated absolutely by the consumers.